

**CLAIMS**

## 1. A radio communication device comprising:

a transmitter-receiver unit that carries out local and bidirectional communication with a mobile telephone;

5 an incoming call notification unit that, when the radio communication device receives from the mobile telephone an incoming call notification signal that indicates that there is an incoming call to the mobile telephone, carries out a notification; and

a control unit that, by using the transmitter-receiver unit, sends, in response to the incoming call, an instruction signal to the mobile telephone to make the mobile telephone respond to the caller by using voice.

## 2. A radio communication device of claim 1, further comprising an external input unit;

wherein the control unit, in response to an operation to the external input unit, sends an instruction signal to make the mobile telephone conduct operations for the incoming call.

## 3. A radio communication device of claim 1, further comprising an external input unit;

wherein the control unit, when a prescribed time period has passed without any operation to the external input terminal after the notification of the incoming call is carried out, sends an instruction signal to make the mobile telephone conduct operations for the incoming call.

## 4. A radio communication device of claim 1:

wherein the control unit, when an incoming call auto-response mode is preset to the radio communication device and the radio communication device receives the incoming call notification signal, sends an instruction signal to make the mobile telephone conduct operations for the incoming call.

5. A radio communication device of claim 1, further comprising a display;

wherein the control unit, when there is a telephone number, a mobile telephone identification information, or a caller identification signal of the mobile telephone in the incoming call notification signal received by the mobile telephone, displays them on the display.

6. A radio communication device of claim 5:

wherein the control unit, by using the transmitter-receiver unit, sends to the mobile telephone, as the instruction signal, a signal that instructs the mobile telephone to send to the caller a message that asks the caller to wait for a moment.

7. A radio communication device of claim 5:

wherein the control unit, by using the transmitter-receiver unit, sends to the mobile telephone, as the instruction signal, a signal that instructs the mobile telephone to send to the caller a message that asks the caller to leave a message.

8. A radio communication device of claim 1:

wherein the control unit, by using the transmitter-receiver unit, sends to the mobile telephone, as the instruction signal, a signal that instructs the mobile telephone to make a communication link between the radio communication device and the caller's communication device via the mobile telephone.

9. A radio communication device comprising:

a transmitter-receiver unit that carries out local and bidirectional communication with a mobile telephone;

an incoming call notification unit that, when the radio communication device receives from the mobile telephone an incoming call notification signal that indicates that there is an incoming call to the mobile telephone, carries out a notification of the incoming signal; and

a control unit that, by using the transmitter-receiver unit, sends to the mobile telephone a message to be sent to the caller to make the mobile telephone conduct processing for the incoming call.

10. A radio communication device comprising:

5 a transmitter-receiver unit that carries out local and bidirectional communication with a mobile telephone;

an incoming call notification unit that, when the radio communication device receives from the mobile telephone an incoming call notification signal that indicates that there is an incoming call to the mobile telephone, carries out a notification of the incoming signal; and

a control unit that, by using the transmitter-receiver unit, sends to the mobile telephone a message to be sent to the caller and an instruction signal that makes the mobile telephone conduct processing for the incoming call.

11. A radio communication device of claim 10, further comprising:

a storage unit that stores the message to be sent to a caller's communication device;

wherein the control unit sends the stored message to the mobile telephone.

12. A radio communication device of claim 10, further comprising:

an input unit that receives a message to be sent to a caller's communication device;

wherein the control unit stores in the storage unit the message that is input by using the input unit.

13. A radio communication device of claim 10:

wherein the message to be sent to the caller is a message that tells the caller to wait for a moment.

14. A radio communication device of claim 10:

wherein the message to be sent to the caller is a message that tells the caller to leave a message.

15. A radio communication device of claim 10:

5 wherein the storage unit that, after sending the message when a caller-sent information is received through the mobile telephone, stores the caller-sent information.

16. A radio communication device of claim 15, further comprising:

an output unit that outputs the caller-sent information that is stored in the storage unit.

17. A radio communication device of claim 10:

wherein the control unit, after sending to the mobile telephone the message to be sent to the caller, as the instruction signal, sends to the mobile telephone a record instruction that instructs the mobile telephone to record information sent from the caller's communication device in response to the message to be sent to the caller.

18. A radio communication device of claim 10:

20 wherein the control unit, after sending to the mobile telephone the message to be sent to the caller, as the instruction signal, sends to the mobile telephone a change order that instructs the mobile telephone to let another device on a network as a substitute of the mobile telephone carry out a communication with the communication device of the caller.

19. A radio communication device of claim 10, further comprising:

25 an operating mode synchronization unit that intermittently conducts a communication with the mobile telephone and, when the operating mode of the mobile telephone shifts, shifts the operating mode of the radio communication device to the operating mode of the mobile telephone after shifting.

## 20. A radio communication device comprising:

a transmitter-receiver unit that carries out local and bidirectional communication with a mobile telephone;

an incoming call notification unit that, when the radio communication device receives from the mobile telephone an incoming call notification signal that indicates that there is an incoming call to the mobile telephone, carries out a notification; and

a control unit that, by using the transmitter-receiver unit, sends, in response to the incoming call, a change order that instructs the mobile telephone to let another device on a network as a substitute of the mobile telephone carry out a communication with the communication device of the caller.

## 21. A mobile telephone comprising:

a transmitter-receiver unit that carries out local and bidirectional communication with a radio communication device; and

a control unit that, after receiving an incoming call from a network, sends, by using the transmitter-receiver unit, an incoming call notification signal to the radio communication device; and, based on an instruction signal received from the radio communication device by the transmitter-receiver unit, responds to the caller by using voice in response to the incoming call.

## 22. A mobile telephone of claim 21, further comprising:

an incoming call notification unit;

wherein the control unit, when there is an incoming call to the mobile telephone, sends the incoming call notification signal in a case when there is a communication link between the mobile telephone and the radio communication device and carries out notification by using the incoming call notification unit in a case when there is a communication link between the mobile telephone and the radio communication device.

23. A mobile telephone of claim 21:

wherein, during the processing for the incoming call, the control unit sends a connection request to a network, makes a communication link between the mobile telephone and the caller's communication device, and sends to the caller's communication device a message for the caller via the communication link.

24. A mobile telephone of claim 23:

wherein, during the processing for the incoming call, the control unit, by the transmitter-receiver unit, sends to the radio communication device information about the caller sent in response to the message to be sent to the caller.

25. A mobile telephone of claim 23, further comprising a storage unit:

wherein the control unit stores information sent by the caller received via the network after sending message to be sent to the caller.

26. A mobile telephone comprising:

a transmitter-receiver unit that carries out local and bidirectional communication with a radio communication device; and

a control unit that, after receiving an incoming call from a network, sends, by using the transmitter-receiver unit, an incoming call notification signal to the radio communication device; and transfers to the caller a message to be sent to the caller, the message being received from the radio communication device by the transmitter-receiver unit.

27. A mobile telephone of claim 26 that intermittently conducts a communication with the radio communication device and, when the operating mode of the mobile telephone is shifted, sends to the radio communication device an operating mode shifting information that tells the operating mode of the mobile telephone after shifting.

28. A mobile telephone comprising:

a transmitter-receiver unit that can carries out local and bidirectional communication with a radio communication device; and

a control unit that, when the mobile telephone receives an incoming call, sends to the radio communication device an incoming call signal by using the transmitter-receiver unit, and when the mobile telephone receives a change order by using the transmitter-receiver unit, request to the network to change the connection from between the mobile telephone and the caller's device to between a device on the network and the caller's device.

29. A method for controlling a radio communication device with a transmitter-receiver unit that carries out local and bidirectional communication with a mobile telephone, the method comprising:

carrying out a notification when the transmitter-receiver unit receives an incoming call notification signal that indicates that there is an incoming call to the mobile telephone; and

sending, by using the transmitter-receiver unit, an instruction signal that makes the mobile telephone respond to the caller by using voice in response to the incoming call.

30. A control method for a radio communication device with a transmitter-receiver unit that is able to carry out local and bidirectional radio communication with a mobile telephone, the method comprising:

notifying, when the transmitter-receiver unit receives an incoming call signal, of incoming signal by using a notification unit; and

sending a message to be sent to the caller and an instruction signal that makes the mobile telephone respond to the caller by using the message.

31. A control method for answering an incoming call to a mobile telephone in a system that has the mobile telephone that can carries out local and bidirectional communication with a radio communication device, the method comprising:

transmitting an incoming call notification signal by the mobile telephone to the radio communication device when the mobile telephone receives an incoming call;

5 receiving the incoming call notification signal by the radio communication device;

notifying the incoming call by the radio communication device; and

sending an instruction signal that make the mobile telephone respond to the caller by using voice.

32. A control method for answering an incoming call to a mobile telephone in a system with the mobile telephone that can carry out local and bidirectional communication with a radio communication device, the method comprising:

transmitting an incoming call notification signal by the mobile telephone to the radio communication device when the mobile telephone receives an incoming call;

15 receiving the incoming call notification signal by the radio communication device;

notifying the incoming call by the radio communication device; and

sending a message to be sent to the caller and an instruction signal that makes the mobile telephone respond to the caller by using the message.

20 33. A program for controlling a radio communication device that can carry out local and bidirectional radio communication with a mobile telephone, the program comprising:

25 a program that makes a control unit of the radio communication device conduct controlling for an incoming call notification when a transmitter-receiver unit of the radio communication device receives an incoming call notification signal that tells the mobile telephone receives an incoming call; and



a program that makes a control unit of the radio communication device send an instruction signal that makes the mobile telephone respond to the caller by using voice.

34. A program for controlling a radio communication device that is able to carry out local and bidirectional radio communication with a mobile telephone, the program comprising:

a program that makes a control unit of the radio communication device conduct controlling for an incoming call when a transmitter-receiver unit of the radio communication device receives an incoming call notification signal that indicates that the mobile telephone receives an incoming call; and

a program that makes the control unit of the radio communication device send an instruction signal that makes the mobile telephone send a message to be sent to the caller and respond to the caller by using the message.

35. A control method for a mobile telephone that can carry out local and bidirectional radio communication with a radio communication device, the method comprising:

making a control unit of the mobile telephone conduct controlling to send to the radio communication device an incoming call notification signal when the mobile telephone receives an incoming call; and

making a control unit of the mobile telephone respond to the caller by using voice based on the instruction signal received from the radio communication device.

36. A control method for a mobile telephone that can carry out local and bidirectional communication with a radio communication device, the method comprising:

making, when the mobile telephone receives an incoming call, a control unit of the mobile telephone send an incoming call notification signal to the radio communication device; and

making, when the mobile telephone receives, from the radio communication device, a message to be sent to the caller and an instruction signal that instructs the mobile telephone to forward the message, the control unit of the mobile telephone conduct processing for forwarding the message.

- 5 37. A program for controlling a mobile telephone that can carry out local and bidirectional radio communication with a radio communication device, the program comprising:

a program that makes a control unit of the mobile telephone conduct controlling to send to the radio communication device an incoming call notification signal when the mobile telephone receives an incoming call; and

a program that makes a control unit of the mobile telephone respond to the caller by using voice based on the instruction signal received from the radio communication device.

38. A control program for a mobile telephone that can carry out local and bidirectional communication with a radio communication device, the program comprising:

a program that, when the mobile telephone receives an incoming call, makes a control unit of the mobile telephone send an incoming call notification signal to the radio communication device; and

a program that, when the mobile telephone receives, from the radio communication device, a message to be sent to the caller and an instruction signal that instructs the mobile telephone to forward the message, makes the control unit of the mobile telephone conduct processing for forwarding the message.

39. A computer readable storage media that stores a control program for a mobile telephone which can carry out local and bidirectional radio communication with a radio communication device, the control program comprising:

a program that, when the mobile telephone receives an incoming call, makes a control unit of the mobile telephone conduct a processing for sending an incoming call notification signal; and

a program that, based on an instruction signal sent by the radio communication device, makes the control unit of the mobile telephone conduct processing for responding for the incoming call and for responding to the caller by using voice.

40. A computer readable storage media that stores a control program for a mobile telephone which can carry out local and bidirectional radio communication with a radio communication device, the control program comprising:

a program that, when the mobile telephone receives an incoming call, makes a control unit of the mobile telephone conduct a processing for sending an incoming call notification signal; and

a program that, when the mobile telephone receives from the radio communication device a message to be sent to the caller and an instruction signal that instructs to forward the message, makes the control unit of the mobile telephone conduct processing for responding to the incoming call and for forwarding the message to be sent to the caller.

41. A radio communication device comprising:

a transmitter-receiver unit that carries out local and bidirectional communication with another radio communication device;

a communication state judgement unit that measures and makes a judgement of state of the bidirectional communication; and

a notification unit that sends information about the state of the bidirectional communication measured by the communication state judgement unit.

42. A radio communication device of claim 41, further comprising:

a notification requirement judgement unit that, based on the judgement of the state done by the communication state judgement unit, makes a judgement whether or not to tell a user of the radio communication device information about the state of the bidirectional communication;

5            wherein the notification unit, when the notification requirement judgement unit judges the user should be notified, sends information about the state of communication.

43. A method for controlling a radio communication device, the method comprising:

10            carrying out local and bidirectional radio communication with another radio communication device;

             judging state of the bidirectional radio communication with the other communication device; and

             notifying the user of information about the state of the bidirectional radio communication.

15            44. A control program comprising:

             a program that makes a control unit of a radio communication device carry out local and bidirectional radio communication between the radio communication device and a radio communication device;

20            a program that makes the control unit of the radio communication device judge state of bidirectional radio communication; and

             a program that makes the control unit of the radio communication device notify the user of information about the state of the bidirectional radio communication.

25            45. A computer readable storage medium that stores a control program, the control program comprising:

a program that makes a control unit of a radio communication device carry out local and bidirectional radio communication between the radio communication device and a radio communication device;

5 a program that makes the control unit of the radio communication device judge state of the bidirectional radio communication; and

a program that makes the control unit of the radio communication device notify the user of information about the state of the bidirectional radio communication.

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